REMARKS

Claims 89-94 and 99-110 are pending in the present application. In the Office Action dated November 4, 2003, the Examiner rejected claims 89-94 under 35 U.S.C. 103(a) as being unpatentable over either U.S. Patent No. 6,261,958 to Crevasse *et al.* ("Crevasse") or U.S. Patent No. 6,244,941 to Bowman *et al.* ("Bowman"), alone, or in view of "Electrostatic Chucks: Frequently Asked Questions" ("FAQ"). The Examiner also rejected claim 99 under 35 U.S.C. 103(a) as being unpatentable over Bowman, alone or in view of FAQ. Finally, the Examiner rejected claims 100-110 under 35 U.S.C. 103(a) as being unpatentable over Crevasse or Bowman in view of FAQ. Applicants disagree with these rejections and wish to clarify various distinctions of Applicants' invention over the cited art. Reconsideration of the invention is therefore requested in light of the following remarks.

Applicants note that the PTO-1449 filed on October 29, 2001, and returned by the Examiner with the Office Action dated November 4, 2003, does not have the reference AP corresponding to the FAQ reference initialed by the Examiner. Applicants maintain, however, that the AP reference is not admissible because the reference was not properly submitted to the Office as required by 37 CFR 1.98(b)(5). In particular, the reference does not include a publication date. The Examiner is reminded that the filing of an Information Disclosure Statement shall not be construed to be an admission that the information cited in the Statement is, or is considered to be, material to the patentability of the invention. The Examiner is referred to MPEP § 609. Accordingly, applicants therefore maintain that the FAQ reference is not properly admissible in the present case.

In the remarks that follow, various technical differences between the references cited by the Examiner and the embodiments of the present invention are discussed. It is understood, however, that any discussion involving various embodiments of the invention, which are disclosed in detail in the applicant's specification, do not define the scope or interpretation of any of the claims. Moreover, any discussion of differences between the references cited and the various embodiments of the invention are intended only to help the Examiner to appreciate the importance of the claimed distinctions as they are discussed.

The disclosed invention is generally directed to methods and devices for releasably attaching a polishing pad to the platen of a planarization machine used to planarize a

semiconductor wafer. In a pertinent embodiment, the platen of the planarization machine may include a conductive plate positioned within the platen that may be connected to an electrical signal source. The planarization medium may further include a support member that has a polishing pad attached to the support member. The electrical signal source may be a voltage capable of charging the conductive plate so that a planarization medium positioned adjacent to the conductive plate may be electrostatically attracted to the platen while the voltage is applied. As a result, the pad is retained on the platen by electrostatically attracting the support member to the platen. To augment the electrostatic attractive force, the support member may optionally include a locking device that engages a mating portion formed in the platen that resists vertical and/or lateral motion of the support member relative to the platen.

An additional embodiment of the disclosed invention includes a polishing pad having a plurality of conductive particles distributed within the pad that may be electrostatically or electromagnetically attracted to the platen. When the polishing pad is electromagnetically attracted to the platen, the electrical signal source includes an electrical current that passes through the conductive plate to produce the attractive force between the platen and the particles distributed in the polishing pad. The particles may be distributed in the pad in a uniform manner, or they may be non-uniformly distributed. For example, the particles in the pad may be concentrated in a portion of the pad that is adjacent to the platen in order to enhance the electromagnetic or electrostatic attractive forces between the pad and the platen.

In rejecting the claims identified above, the Examiner has cited the Crevasse reference, which discloses an electromagnetic polishing pad retention apparatus. Referring in particular to Figure 3 of the Crevasse reference, the differences between the disclosed embodiments and the Crevasse apparatus are readily understood. Crevasse discloses and teaches an electromagnet 54 is positioned within a platen 40 that is coupled to a current source through a switch 56. The polishing pad 32 is attached to a backside layer 36 that is comprised of a magnetic material, such as a thin steel sheet (col. 5, lines 5-10). Accordingly, the backside layer 36 is attracted to the platen 40 when the electromagnet 54 is connected to the current source through the switch 56. The layer 36 is disclosed as a substantially planar member that is detachable from the platen by interruption of the current. The Crevasse reference, however, fails to disclose that the layer 36 may be replaced by a plurality of conductive particles distributed in the pad 32, as disclosed in an embodiment of present application. Further,

Crevasse makes no mention of retaining the layer 36 on the platen 40 by means of electromagnetic attractive forces.

The Examiner as further cited the Bowman reference in rejecting the present claims. Bowman similarly discloses an electromagnetic polishing pad retention apparatus. With respect to the pertinent teachings in Bowman, the applicants respectfully assert that the disclosure of Bowman is substantially identical to the disclosure in the Crevasse reference, as will be briefly described. Referring to Figure 6, a plurality of electromagnetic elements 338 are positioned in the platen 328 that are coupled to a current source through a switch 340. A top plate member 332 is positioned on the platen 328, that further includes a polishing pad 326 that is attached to a surface of the member 332. When a current is applied to the electromagnetic elements 338, an electromagnetic attractive force is developed between the top plate member 332 and the platen 328. Bowman, however, also fails to teach that the member 332 may be replaced by a plurality of conductive particles distributed in the pad 326, or that the polishing pad may be retained on the platen by electrostatic attractive forces.

The Examiner has further asserted that applicants have disclosed that "*...either type of force will would work equally well.*". That is, an electrostatic means of attraction is equally interchangeable with an electromagnetic means of attraction. Applicants strenuously disagree. Applicants have made no such admission in the specification. Applicants also disagree, in general, with the Examiner's position that it would be obvious to one of ordinary skill in the art to replace the means for generating an electromagnetic attractive force with the disclosed electrostatic force generation means. Briefly and in general terms, it is well known that electrostatic forces are generated *in the absence of the movement of a current*, relying instead upon the imposition of a voltage that is calculated to generate the requisite degree of attraction. Conversely, the generation of electromagnetic forces relies exclusively on *the movement of a current through a conductor* to generate an attractive force, and further must act upon a ferromagnetic material in order to develop any sizeable attractive force.

The Examiner further takes Official Notice of the alleged equivalence of electrostatic and electromagnetic forces for retaining a polishing pad on a platen of a planarization machine. Applicant respectfully submits that the Examiner's use of Official Notice in the present situation is improper. As set forth in the MPEP § 2144.03, the Examiner may take Official Notice of facts outside of the record which are capable of instant and unquestionable

demonstration as being "well known" in the art. In the present case, the particular apparatus for retaining the pad on the platen, in combination with other aspects of the present invention are not capable of instant and unquestionable demonstration as being well known in the art, precisely because the particular combination of elements is the inventive contribution of the Applicant. The MPEP also states that no documentary proof for Official Notice is needed in cases where such knowledge is of "notorious character." There is no such notorious character present when electrostatic or even electromagnetic means of attraction are used in connection with the disclosed invention.

The foregoing section of the MPEP further requires that assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference. If the Examiner believes the technical field of this application is not esoteric, then in the absence of citing technical references, 37 C.F.R. 1.104(d)(2) provides that Applicant is entitled to obtain an affidavit from the Examiner providing data that is "as specific as possible" in support of a reference made (here, the reference is "Official Notice"). The rule further provides that Applicant is entitled to contradict such an affidavit or provide further explanation in response thereto.

Turning now to the specific claim language, patentable differences between the cited references and the disclosed embodiments of the present invention will be pointed out. Claim 89 recites in pertinent part, "...applying a signal to the platen that produces *an electrostatic attractive force* between the platen and the planarizing medium." (Emphasis added). As noted above, neither of the applied references disclose or even fairly suggest removably attaching the polishing pad by producing an electrostatic attractive force between the polishing pad and the platen. As also noted above, electrostatic and electromagnetic forces cannot reasonably be regarded as equivalents. Still further, applicants specifically object to the application of the FAQ reference as inadmissible for lacking a date. Therefore, claim 89 is allowable over the cited references. Further, claims that depend from claim 89 are similarly allowable based upon the allowability of the base claim and further in view of the additional limitations present in the dependent claims.

Claim 100 recites in pertinent part, "...*distributing a plurality of conductive particles in the planarizing medium*...and...applying a signal to the platen that produces an electromagnetic attractive force between the platen and the conductive particles in the

planarizing medium." (Emphasis added). The Bowman reference does not disclose, or even fairly the distribution of conductive particles in the planarizing medium. Instead, Bowman discloses a plurality of electromagnetic elements positioned within a platen that attract a top plate member comprised of a magnetic material. The polishing pad is then positioned onto the top plate member. Claim 100 is allowable over the cited references. Further, claims that depend from claim 100 are similarly allowable based upon the allowability of the base claim and further in view of the additional limitations present in the dependent claims.

Claim 107 recites in pertinent part, "A method for releasably attaching *a planarizing medium having a plurality of internally distributed conductive particles* to a platen of a planarization machine, comprising...positioning the planarization medium adjacent to the platen...and...coupling a signal to the platen *to produce an electromagnetic attractive force between the conductive particles and the platen."* (Emphasis added). Again, neither of the applied references disclose or even fairly suggest this. Claim 107 is therefore allowable over the cited references. Further, claims that depend from claim 107 are similarly allowable based upon the allowability of the base claim and further in view of the additional limitations present in the dependent claims.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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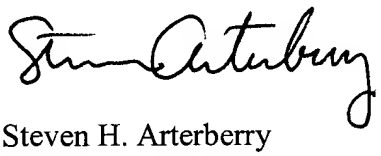

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